Operation Manual

ARGO 300

240 Channel Mobile AM / FM Transceiver

General Description

This Model is a combination transmitter-receiver designed primarily for mobile use. It employs the very latest technology to provide 240channels of operation by means of digital frequency synthesis with PLL (phase-locked-loop) circuitry.
The use of PLL assures a precise on-frequency operation on every channel in both transmit and receive mode. This model also includes many other features which will provide greater operating convenience and assure optimum communications under a wide range of conditions.

Operable on 240 channels divided into six groups of 40 channels.
Full noise reduction features - ANL and noise blanker.
2 modes of operation - AM, FM - selectable with switch.
RF power output switchable in 2 ways for required communication range.
External speaker jack for an extra sound source.
Electrically floating cliassis for negative ground operation without switching.
A high-sensitivity dynamic microphone equipment.

CAUNTION

FOR REPLACEMENT OF THE FUSE
IN DC POWER CABLE, PLEASE BE SURE
TO USE 2A FUSE.

Specifications

General

* Channel	:	240 channel (40CH X 6)
* Frequency composition	:	Digital phase locked loop synthesizer
* Modulation mode	:	AM/FM
* Frequency range	:	Band A 26.065 ~ 26.505 Mhz
		〃 B 26.515 ~ 26.955 〃
		〃 C 26.965 ~ 27.405 〃
		〃 D 27.415 ~ 27.855 〃
		〃 E 27.865 ~ 28.305 〃
		〃 F 28.315 ~ 28.755 〃
* Channel spacing	:	10 kHz
* Antenna impeadance	:	50 Ohm
* Power supply source	:	13.8 Volt DC(Only negative ground)
* Operating temperature	:	-10℃ ~ +50℃
* Dimensions	:	160(W) X 55(H) X 210(D)mm
* Weight	:	1,100 g

Receiver

* Sensitivity	:	AM 1 uV, S/N 10dB
		FM 1 uV, S/N 20dB
* Selectivity	:	60 dB
* Squelch range	:	0.2 uV ~ 500 uV
* IF	:	1 st 10.695 MHz ,2nd 455 KHZ
* Audio output power	:	2 watts at 8 Ohm
* Sprious response	:	50 dB

Transmitter

* RF output power	:	AM/FM High 7 watt
		Low 4 watt
* Frequency stability	:	0.005%
* Modulation capability	:	AM 100%, FM 2.5 Khz deviation max.
* Sprious emission	:	60 dB

CONTROL LOCATIONS

Fig. 1

1. Channel Selector
2. LED Channel Indicator
3. Signal Strength/Powe Output Indicators
4. Band Selector
5. On / Off-Volume Control
6. Receive Indicator
7. Squelch Control
8. Transmit Indicator
9. RF Gain Control
10. AM Indicator
11. FM Indicator
12. RF power switch
13. Model selector Switch
14. ANL + NB /Off Switch

Fig. 2

15. Microphone Socket
16. Power Socket
17. External Speaker Socket
18. Coaxial Acrial Socket

FRONT VIEW

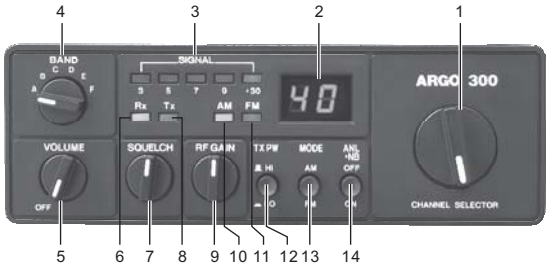


Fig. 1

REAR VIEW

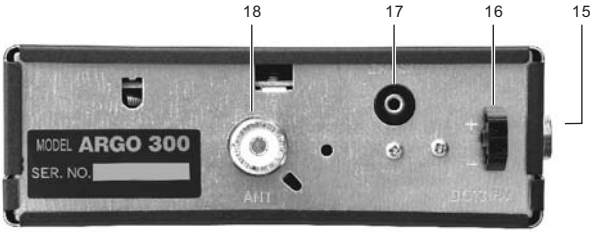


Fig. 2

Operating Controls and Features

1. Channel selector
A 40-detent rotary, switch to select any of 240 channels in conjunction with the Band Selector switch.
Window above this switch indicates the channel selected using an LED (Light-emitting-diode)digital readout.

2.Channel indicator
A digital LED display to show channel selected.
Turned off when operating PA.

3.S/RF indicator
When an incoming signal is received the RX indicator will illuminate. and the signal indicator will illuminate to monitor the relative strength of the signal. The strength of the incoming signal will depend on the performance of the transmitter and aerial, your distance from it and the nature of the surrounding area, not on your set's ability to receive the transmitted signal.
Power output is registered by the LED indicators.

4.Band Selector
Selects a group of 40 channels in six positions - A, B, C, D, E or F (240 in all).

5.Off/Volume Control
Varies the sound output form the speaker. Also incorporates an on-off switch at the extremely counterclockwise position.

6.RX indicator
Lights up when receiving.

7.Squelch Control
Used to eliminate any annoying background noise when no signals are present. The degree of sensitivity to incoming signals is adjustable. When the Squelch control is rotated to the fully clockwise position, it provides maximum squelch, in the fully counterclockwise position, it provides minimum squelch.

8.TX indicator
Lights up when transmitting.

9.RF Gain Control
Selects RF Gain (receiver sensitivity) of the transceiver in variations.
MAX. In this position, the receiver section provides maximum sensitivity so that it can pick up even weak signals.
Normally this switch should be placed in this position.
MIN. In this position, the receiver sensitivity is minimum, and the receiver will pick up only the strong signals. May be used when receiving strong (close) signals which are causing overload in receiving sound.

10. AM indicator
Lights up when operating AM

11. FM indicator
Lights up when operating FM

12. Power Selector

Enables you to select the RF power output of the transceiver in 2 ways.

High. In this position the transceiver produces full rated RF power for maximum communication range.

LOW. In this position, the minimum RF power output is obtained, may be used for short range communication.

13. Mode switch

Selects the mode of reception and transmission -AM (amplitude modulation).
FM (frequency modulation)

14.ANL + NB/Off Switch

In the upper position the ANL is activated lower position the ANL is off and in together with the NB(noise blanker).

15.Microphone jack

Accepts plug form the microphone supplied. The jack has a locating key inside and allows the plug inserted in only one way. Do not force the plug but align key way properly onto the jack.

16. 13.8 V DC jack

13.8 V DC power for the transceiver supplied through this socket (using DC power cable supplied).

17.Exermal Speaker jack

Used to connect an external speaker (8 Ohm 4 W) as an extra sound source.
Insertion of the plug from a speaker will silence the internal speaker automatically.

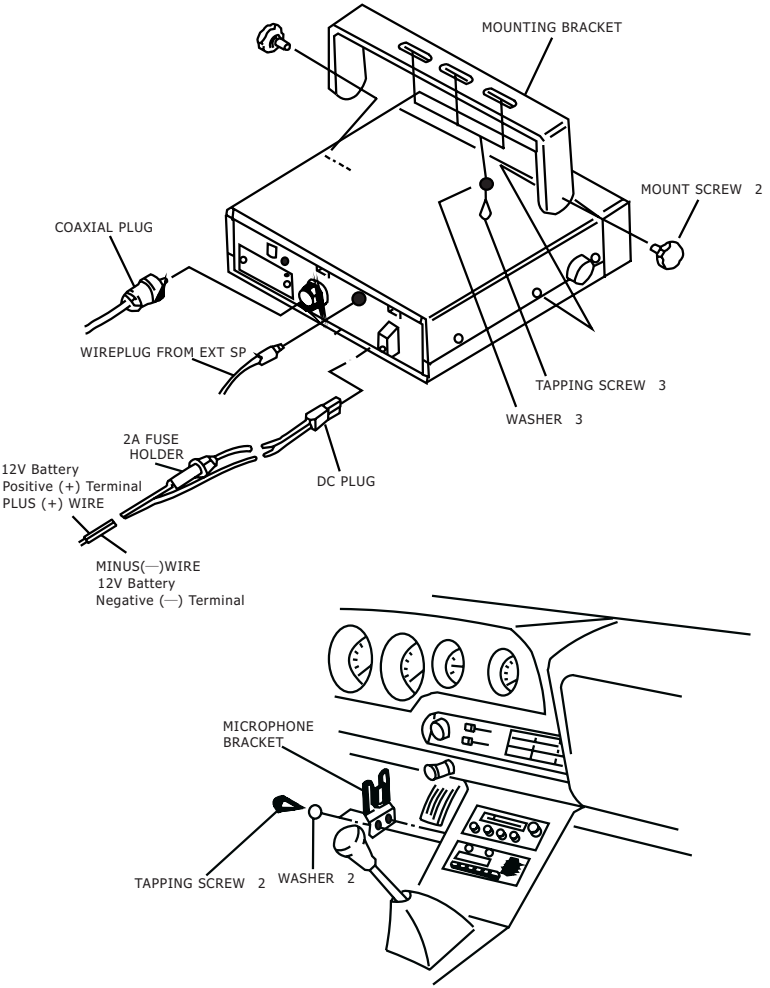
18. Antenna

Accepts a PL 259 type coaxial connector from the antenna lead-in cable.

Installation

Safety and convenience are the primary factors in deciding exactly where to locate your transceiver. The transceiver is designed for ease in control accessibility .Be sure that the unit is located so that it does not interfere with the driver or impair access to any controls. Connecting cables must be routed and secured in such a controls. Interference from either the operation of the brake, accelerator or other controls. Interference from either the unit or connecting cables may contribute to the loss of control of the vehicle.

The transceiver is designed for use with either negative or positive ground electrical systems.



Mechanical Mounting

Step 1: Use the mounting bracket as a template for marking the location of screwholes under your dash. Use an awl, nail or other pointed object to mark the metal.

Step 2: Drill a 3.2mm hole for each screwhole in the mounting bracket. Attach the bracket to the dash with the machine screws provided. Extreme caution should be exercised when drilling into dash to avoid damage to underdash electronic ignition, cruise control, instrument and / or accessory wiring.

Step 1: With negative ground system, connect the red wire (one with in-line fuse holder) to either the (a) fuse block, (b) cigarette lighter, or (C) directly to the positive post on the battery . Usually, the fuse block is the most convenient connecting point. It is also possible to connect to the Accessory terminal on the fuse block or ignition switch, so that your CB unit automatically goes off, preventing accidental battery drainage. Then tightly connect the black wire directly to the vehicle's metal frame.

Step 2: With positive ground system, reverse the wires, connecting the red/ fuseholder wire to the frame, the black wire to your DC power source. A light or meter can be a good aid in locating a suitable power source and ground. In either case, a good, direct metal-to-metal ground is essential for optimum performance.

Connect your antenna system to the antenna connector, If you are using an external speaker or a PA speaker, connect it to the appropriate jack one unit rear panel.

CB Antennas

Note: The licence requires that equipment which have provision for the connection of an external antenna shall not be connected to other than a single element rod or wire antenna not exceeding 1.5m in overall length.

For best reception and transmission, your radio should use an antenna especially designed for a frequency of 27.7 MHz. Antennas are purchased separately and supplied with assembly and installation instructions, mounting hardware, and a coaxial antenna cable fitted with a fully assembled standard connector (type PL-259) for quick connection to your transceiver. CB antennas are available in many sizes and styles. Base loaded quarter-wave antennas are most popular because they require less space than full quarter-wave types and are easily installed.

These antenna types physically shorter but electrically equivalent to full quarte rwave whip antennas. We advise the use of base loaded whips of less than 1.5 meters.

The antenna's mounted location on the vehicle affects the operation of the radio. Transmission and reception characteristics vary for different antenna locations, Three of the most popular antenna mountings are shown on next page.

Roof mount - The antenna mounted on roof represents a transmission/reception range closest o ideal.

Front cowl mount - The radiation pattern is slightly greater in the direction of the rear bumper opposite the side on which the antenna is mounted. Provides case in antenna mounting.

Rear deck mount - The radiation pattern is strongest in the direction of the front bumper opposite the side on which the antenna is mounted.

Roof Mount

Front Cowl Mount

Rear Deck Mount

General rules for best mobile antenna performance

1. Mount antenna on vehicle as high as possible.
2. The higher percentage of the antenna length mounted above rooftop, the better performance.
3.Centre antenna in middle of selected location (i.e., boot, gutter or roof).
4.Install an antenna cable line away from noise sources (ignition system, gauges ,etc.).
5.Be sure to mount antenna with a good mental-to-metal ground.
6. Prevent antenna cable damage.

About SWR

Antenna performance may be peaked by slightly adjusting its length(1/8″to 1/4″) using an SWR (standing wave ratio) meter. This meter is purchased separately or the SWR can be checked professionally. Most antennas are factory-tuned,but this adjustment may improve antenna efficiency. An SWR reading below 3:1 is desired, as this indicates that over 75% of the transmit power is broadcast power is broadcast into the air. The rest is ‘reflected’ back into your transceiver and dissipated as harmless heat.

See chart below. An SWR of 2:1 or below is good, 2.5 or even 3 is usually not user noticeable or significant.

SWR Reading	Output Power Transmitted
1 :1	100%
1.3 :1	98.3%
1.5 :1	96.0%
1.7 :1	93.3%
2 :1	89.0%
3 :1	75.0%
4 :1	64.0%
5 :1	58.0%
6 :1	49.0%
10 :1	33.0%

Channel Selection

The transceiver is capable of operation on 240 channels which are divided into 6 groups of 40 channels - A,B,C,D,E and F. These groups are selected with the Band Selector switch as the following.

Band switch

Position	Frequency Range
A	26.065 to 26.505 MHz
B	26.515 to 26.955 MHz
C	26.965 to 27.405 MHz
D	27.415 to 27.855 MHz
E	27.865 to 28.305 MHz
F	28.315 to 28.755 MHz

After the band to which the channel you desire to operate belongs is selected, rotate the channel selector to find the channel. Rotating the channel selector clock-wise or counterclockwise by 1 detent will tune the transceiver 10 kHz upscale or downscale. C If you desire to operate on 27.405 MHz first set the Band selector switch to `c`, then turn the channel selector to the position at which the channel readout shows '40'.

Operation

(1) Turn the Volume control clockwise to apply power to the transceiver. The LED display should be illuminated.
(2) Rotate the Squelch control counterclockwise fully.
(3) Select the mode of reception AM, FM.
(4) Set the RF Gain control maximum position.
(5) Select the channel desired.
(6) To transmit, depress the transmit switch on microphone, to receive, release the switch.

RF Gain Control Ajustment

Normally, this control should be set to Max. Position to provide maximum receiver sensitivity for long range reception. However, When communicating with a nearby station, you may find that the strong signal from this station may cause overloading of your receiver. In such a case. You can sue this control to reduce the receiver Sensitivity and thus prevent any overloading and distortion that may occur as a result of the extremely strong incoming signals. First set the switch to center and if this position will not provide a sufficient reduction of overloading condition, set to minimum Position.

Frequency/Channel Chart

A-Band		B-Band		C-Band		D-Band		E-Band		F-Band	
	MHz		MHz		MHz		MHz		MHz		MHz
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
1	26.065	1	26.515	1	26.965	1	27.415	1	27.865	1	28.315
2	26.075	2	26.525	2	26.975	2	27.425	2	27.875	2	28.325
3	26.085	3	26.535	3	27.985	3	27.435	3	27.885	3	28.335
4	26.105	4	26.555	4	27.005	4	27.455	4	27.905	4	28.355
5	26.115	5	26.565	5	27.015	5	27.465	5	27.915	5	28.365
6	26.125	6	26.575	6	27.025	6	27.475	6	27.925	6	28.375
7	26.135	7	26.585	7	27.035	7	27.485	7	27.935	7	28.385
8	26.155	8	26.605	8	27.055	8	27.505	8	27.955	8	28.405
9	26.165	9	26.615	9	27.065	9	27.515	9	27.965	9	28.415
10	26.175	10	26.625	10	27.075	10	27.525	10	27.975	10	28.425
11	26.185	11	26.635	11	27.085	11	27.535	11	27.985	11	28.435
12.	26.205	12.	26.655	12.	27.105	12.	27.555	12.	28.005	12.	28.455
13.	26.215	13.	26.665	13.	27.115	13.	27.565	13.	28.015	13.	28.465
14.	26.225	14.	26.675	14.	27.125	14.	27.575	14.	28.025	14.	28.475
15.	26.235	15.	26.685	15.	27.135	15.	27.585	15.	28.035	15.	28.485
16.	26.255	16.	26.705	16.	27.155	16.	27.605	16.	28.055	16.	28.505
17.	26.265	17.	26.715	17.	27.165	17.	27.615	17.	28.065	17.	28.515
18.	26.275	18.	26.725	18.	27.175	18.	27.625	18.	28.075	18.	28.525
19.	26.285	19.	26.735	19.	27.185	19.	27.635	19.	28.085	19.	28.535
20.	26.305	20.	26.755	20.	27.205	20.	27.655	20.	28.105	20.	28.555
21.	26.315	21.	26.765	21.	27.215	21.	27.665	21.	28.115	21.	28.565
22.	26.325	22.	26.775	22.	27.225	22.	27.675	22.	28.125	22.	28.575
23.	26.355	23.	26.805	23.	27.255	23.	27.705	23.	28.155	23.	28.605
24.	26.335	24.	26.785	24.	27.235	24.	27.685	24.	28.135	24.	28.585
25	26.345	25	26.795	25	27.245	25	27.695	25	28.145	25	28.595
26.	26.365	26.	26.815	26.	27.265	26.	27.715	26.	28.165	26.	28.615
27.	26.375	27.	26.825	27.	27.275	27.	27.725	27.	28.175	27.	28.625
28.	26.385	28.	26.835	28.	27.285	28.	27.735	28.	28.185	28.	28.635
29.	26.395	29.	26.845	29.	27.295	29.	27.745	29.	28.195	29.	28.645
30.	26.405	30.	26.855	30.	27.305	30.	27.755	30.	28.205	30.	28.655
31.	26.415	31.	26.865	31.	27.315	31.	27.765	31.	28.215	31.	28.665
32.	26.425	32.	26.875	32.	27.325	32.	27.775	32.	28.225	32.	28.675
33.	26.435	33.	26.885	33.	27.335	33.	27.785	33.	28.235	33.	28.685
34.	26.445	34.	26.895	34.	27.345	34.	27.795	34.	28.245	34.	28.695
35.	26.455	35.	26.905	35.	27.355	35.	27.805	35.	28.255	35.	28.705
36.	26.465	36.	26.915	36.	27.365	36.	27.815	36.	28.265	36.	28.715
37.	26.475	37.	26.925	37.	27.475	37.	27.825	37.	28.275	37.	28.725
38.	26.485	38.	26.935	38.	27.385	38.	27.835	38.	28.285	38.	28.735
39	26.795	39	26.945	39	27.395	39	27.845	39	28.295	39	28.745
40	26.505	40	26.955	40	27.405	40	27.855	40	28.305	40	28.755